

# THE DAIRY RESEARCH FOUNDATION'S 2020 Online Symposium



**21 & 22 July, 2020**



THE UNIVERSITY OF  
SYDNEY

## Welcome to the 2020 Dairy Research Foundation's Online Symposium

*This year we focus on BUS.IN.ES.S: business, innovation, emerging science & society*

Welcome to the 2020 Dairy Symposium, Live-Online!!

After another very successful event in Bega, NSW in 2019, we are back to our University of Sydney home venue, but this time in Webinar mode, due to current restrictions.

We are keeping our 2-day format, but from 9 am to 12 noon each day, to make it easier for farmers and industry people to attend online.

The dairy industry has endured all imaginable and unimaginable challenges over the last few years. As businesses, dairy operations need to navigate through these challenges, some times over uncharted territory, like Covid-19. Business management is therefore primordial for ultimate success. That is why our theme this year revolves around "BUSINESS".

But with a change. We also wanted to address the complexity of issues including growing pressures from consumers and society; and also show the light at the end of the tunnel through scientific research, and technology and innovation. Accordingly, our symposium this year has four blocks:

### **Dairy BUS.IN.ES.S: business, innovation, emerging science & society**

On Business, Innovation and Society blocks there will be 3 highly qualified speakers and discussion panels. Emerging Science will include an international keynote scientist followed by 7 short presentations from PhD students doing research in dairy science.

I would like to sincerely thank all members of our Organising Committee, who have dedicated a lot of time and provided invaluable input all along the organisation of this event.

We hope you can attend, participate and enjoy this terrific program and we look forward to welcoming you to the Symposium on 21<sup>st</sup> and 22<sup>nd</sup> July.



Professor Yani Garcia

Chair of the 2020 DRF Symposium  
Organising Committee



## **Key Speakers: Tuesday 21 July**

### **Bill Malcolm**

Bill Malcolm teaches, researches and writes about farm economics in general and dairy farm economics in particular at the University of Melbourne and has done so for 40 years. He has lifelong interest and involvement in farming, in Australia and abroad, with a focus on managing risk well to achieve farmer goals. Holding degrees from both The University of New England and The University of Melbourne, Bill's research has focussed on agricultural economics, farm economics, resource economics, and agribusiness.



### **Sheena Carter**

In March 2020 Sheena was appointed as the new Dairy Farm Business Management Development Officer with NSW DPI, a role that she is very excited and passionate about. She has been heavily involved with delivery of national farm business management programs over the last 3 – 4 years during her tenure with Dairy NSW and also involved with the NSW Dairy Farm Monitor Project since its inception in NSW 9 years ago. Currently there is a strong industry focus on assisting farmers to understand and manage their businesses to ensure their profitability and ability to manage volatility and risk. Sheena's new role within the Dairy Business Advisory Unit of NSW DPI will be instrumental in helping NSW farmers on this journey.



### **Justin Walsh**

In 2007 Justin completed a Science in Agriculture degree from the University of Sydney then returned to work on the family farm in a sharefarming arrangement with his parents for 9 years. In 2016 Justin and his wife, Libby, began leasing the family farm along with purchasing some land, plant and equipment and the young stock from his parents. In 2018 they became the NSW focus farm, a 2 year program that is nearing its completion. They are currently milking 280 cows calving twice a year in a predominately pasture/grain system.



## Key Speakers: Tuesday 21 July

### Dan Weary

Dan Weary is a Professor at The University of British Columbia. In 1997 Dan co-founded UBC's Animal Welfare Program and co-directs this active research group. Dan's research focuses on developing behavioral measures for the objective assessment of animal welfare and developing practical methods of improving the welfare of animals. Dan's work on calves has helped lead to changes in feeding practices (including the adoption of higher milk rations), housing methods (including the adoption of pair and small group rearing for pre-weaned calves), and pain management (for disbudding). Work on cows has focused on improved comfort (especially in stall design and management), and how these changes can benefit cow health (especially lameness).



### Richard Heath

Richard Heath is Executive Director of the Australian Farm Institute, an independent agricultural policy research organisation. Richard is a Nuffield Scholar and was a farmer at Gunnedah for 20 years until 2012. Previous to his current role Richard was an Associate Professor of Agronomy and Farm Management at the University of Sydney. He is currently also a director of the GRDC and member of CSIRO Food and Ag advisory committee.



### Emily Neilson

Emily and husband Matt leased a property in the Hunter Valley in 2015 and purchased a small herd of milkers to begin their roller coaster of a 'dairy journey'. With a strong passion in education, in 2016 Emily started up a dairy education business called Farm Visit which invites consumers to the farm to learn all about how milk is made, what it's really like to be a dairy cow and why we do what we do. The program aims to increase product value of consumers by closing the gap between them and the farm; and to increase the social license of the industry by answering the tough questions consumers might have for farmers regarding things like bull calves, dehorning or separating calves from cows. Emily is also the Hunter representative of the NSW Young Dairy Network.

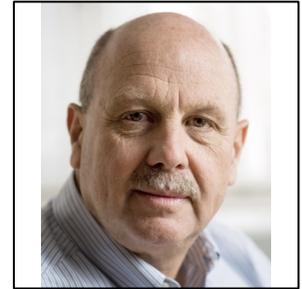




## **Key Speakers: Wednesday 22 July**

### **Rupert Bruckmaier**

Professor Rupert Bruckmaier is a world-expert in physiology and endocrinology of lactating ruminants and Head of Veterinary Physiology, Vetsuisse Faculty, University of Bern, Switzerland since 2005. His research fields include metabolism of high yielding cows, milking physiology and milking management, role of oxytocin and other hormones in the regulation of milk ejection, and mammary immune response to pathogens and mastitis. He has published over 300 articles in peer-reviewed journals and several of his findings have led to improvements in the milking technology including automatic milking systems, and in particular to optimization of the milking routine. Rupert is routinely invited to present his research at the most prestigious conferences in EU, North America and Australasia.



### **Sabrina Lomax**

Sabrina is a Senior Lecturer in livestock behaviour and welfare and a lead scientist in the Livestock Production and Welfare Group at the University of Sydney. Her research is focused on promoting best practice livestock production through the integration of technology and animal behaviour and welfare science. Sabrina's family agricultural background led to her interest in animal health and production. She completed her PhD in 2011 examining topical anaesthesia for painful livestock husbandry procedures. Her post-doctoral research examined novel methods of pain assessment and alleviation, and focused on improving the welfare of extensively farmed livestock.



### **Nick Bullock**

Nick Bullock has over 20 years' experience working with farmers to review their current farm practices, identify improvements for production and environmental benefit and facilitate implementation. This has required understanding each farmer's systems and realising the potential for change. He has worked with dairy, beef, oyster, pig, poultry and irrigation farmers. Projects have ranged from energy efficiency, renewable energy, whole farm planning, farm mapping, dairy effluent, irrigation, pumping and reticulation systems. As an ex-dairy farmer he understands farmers' perspective and barriers to change.



### **Andrew Smith**

Andrew currently works as a Dairy Systems Analyst for Australian Fresh Milk Holdings, having previously held the role of Dairy Manager at Moxey Farms, Gooloogong after graduating from Charles Sturt University in 2018 with a Bachelor of Veterinary Science. Andrew has a passion for the profitability, sustainability and growth of dairy businesses, growing up in a family dairy business and dedicating his tertiary education to building a strong grounding in dairy production, including time spent studying in both New Zealand and the USA.



# Dairy Research Foundation 2020 Symposium



## PROGRAM - Tuesday 21 July

9.00am	Welcome to Dairy Research Foundation Symposium	Michael Perich, DRF President Prof Yani Garcia, DRF Director
<b>9.05-10.25am</b>	<b>Session 1: BUSINESS</b>	Chair: Greg Duncan Dairy NSW
9.05am	The challenge of managing dairy farming businesses under increasingly risky and uncertain economic and climatic conditions	Professor Bill Malcolm Farm Economist University of Melbourne
9.25am	Managing risk on farm – the NSW experience	Sheena Carter Dairy Farm Business Management Development Officer, NSW DPI
9.45am	The on farm settings to control risk and drive profit	Justin Walsh Dairy farmer, Nowra NSW
10.05am	Panel Discussion	
10.25-10.30am	Break	
<b>10.30am-12.00pm</b>	<b>Session 2: SOCIETY</b>	Chair: Dr Sabrina Lomax University of Sydney
10.30am	Public and producer attitudes: working together to maintain social licence	Professor Dan Weary Animal Welfare and Behaviour University of British Columbia, Canada
10.55am	Institutional risk in agriculture – is there anything you can do about it?	Richard Heath Executive Director Australian Farm Institute
11.20am	The challenges of the educated consumer	Emily Neilson Young Dairy Network, Hunter Valley NSW
11.40am	Panel Discussion	
11.55am	Conclusion	



**PROGRAM - Wednesday 22 July**

9.00am	Welcome	Prof Yani Garcia, DRF Director
<b>9.00-10.25am</b>	<b>Session 1: EMERGING SCIENCE</b>	Chair: Dr Nicolas Lyons NSW DPI
9.00am	Novel research developments in milking management to optimise performance	Professor Rupert Bruckmaier Veterinary Physiologist University of Bern, Switzerland
9.30-10.25am	<b>Emerging Scientists</b>	
	Grazing dairy cows with a virtual fence	Patricia Colusso University of Sydney
	Influence of prepartum dietary cation-anion difference and the decline of calcium at the onset of lactation	Meghan Connelly, University of Wisconsin – Madison
	Ways to increase profitability in robotic milking	Juan Ignacio Gargiulo University of Sydney
	Vocal characteristics of peripartum dairy cows	Alexandra Green University of Sydney
	Pasture-based dairy cow-calf rearing system study	Sarah Mac University of Sydney
	Impact of feeding management on enteric methane emission of dairy cows	Sineka Munidasa University of Melbourne
	The baby-sitters club: can calves benefit from spending time with older animals?	Laura Field University of Melbourne
10.25-10.30am	Break	
<b>10.30am-12.00pm</b>	<b>Session 2: INNOVATION</b>	Chair: A/Prof Cameron Clark University of Sydney
10.30am	Technology revolution or evolution? R&D applications and opportunities for the dairy industry	Dr Sabrina Lomax Animal Behaviour & Technology expert, University of Sydney
10.50am	Energy opportunities for dairy farmers	Nick Bullock Energy Efficiency Solutions, NSW
11.10am	Innovative dairy systems	Dr Andrew Smith Dairy Systems Analyst, Australian Fresh Milk Holdings Gooloogong, NSW
11.30am	Panel Discussion	
11.55am	Conclusion	

## Emerging Scientists: Wednesday 22 July

### Patricia Colusso

Patricia has always had a strong passion for animal science and agriculture and pursued higher education in these areas. She is interested in the differences in behaviour and personality between dairy cows, and the importance of the herd for cow behaviour and response to the external environment. Patricia's PhD work aims to explore how virtual fencing can be optimised for pasture based dairy systems and investigate the individuality and sociality of dairy cow behaviour, in the context of learning and response to VF technology.



### Meghan Connelly

Meghan Connelly is a fourth year PhD student studying Dairy Science with an emphasis in Lactation Biology at the University of Wisconsin – Madison. Meghan grew up on a small, 4th-generation dairy in Minnesota, United States. Her family currently milks 50 cows and Meghan still plays an active role in her family farm as she finishes her graduate degree. Her love for the dairy cow started at a young age and fed into her desire to learn more about the bovine, leading her to her current research area delving into serotonin and calcium metabolism in the dairy cow.



### Laura Field

Laura Field is an Agricultural Science PhD Candidate with the Animal Welfare Science Centre at the University of Melbourne, investigating ways to improve production and welfare outcomes through replacement heifer management choices on Australian farms. Her experiment at the Tasmanian Institute of Agriculture's Dairy Research Facility in which replacement heifers were reared with older dry cows, will form the basis of her PhD. She believes that at the core of all welfare research should be an understanding of the real constraints of everyday dairy production, and hopes to use her research to bridge the gap between best practice as defined by scientific research, and what is possible in a commercial setting.





## **Emerging Scientists: Wednesday 22 July**

### **Juan Ignacio Gargiulo**

After studying Agriculture Science and completing a Postgraduate degree in Dairy Science in Argentina, Juan started his professional career in the dairy industry giving direct support to farmers across Argentina. After a four-month internship in Australia in 2017, Juan returned in 2018 to study a PhD at The University of Sydney with the Dairy Science Group. His current research is focused on investigating the applications and impacts of automation in pasture-based dairy systems, and is supported by NSW DPI and the Dairy Research Foundation.



### **Alexandra Green**

While not from a farming background, Alexandra has always been passionate about animals and an advocate for good animal welfare practices. Alexandra was first exposed to the agricultural industry during her undergraduate degree and began her PhD in 2016 with the Livestock Production and Welfare Group at the University of Sydney, where she combined her interests of animal behaviour and cattle, to study the vocal behaviour of Holstein-Friesian dairy cows. Alexandra's research involves studying the context-related vocal characteristics of cows, as well as phonatory, maternal and stress behaviours associated with their vocal production. She hopes that one day her research will be used to non-invasively assess dairy cattle welfare through visual and aural means.



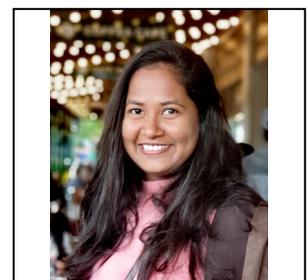
### **Sarah Mac**

Sarah is in her second year of a PhD at the University of Sydney pursuing a thesis in optimising the weaning process in cattle. During her undergrad, Sarah conducted a calving detection study at the University of Kentucky (USA). Sarah met her current adviser, Cameron Clark, at the 2018 DairyCare conference in Greece while presenting her undergraduate research. Within her first year of her PhD, Sarah conducted a collaborative study with the University of British Columbia, rearing dairy calves on the cow. Future research will focus on using sensor-derived behaviour states to optimise the weaning process.



### **Sineka Munidasa**

Sineka is studying a Master of Agricultural Sciences at the Faculty of Veterinary and Agricultural Sciences, The University of Melbourne. She is currently doing her final year major research project; area of estimation and mitigation of enteric methane emission and urinary nitrogen excretion. Sineka completed a BSc (Hons) in Agricultural Technology and Management at the Faculty of Agriculture, University of Peradeniya, Sri Lanka. She worked as a temporary lecturer in the same faculty soon after her graduation. Her future ambition is to contribute to minimising the environmental footprint of the dairy industry.



The Dairy Research Foundation's 2020  
Symposium is proudly supported by



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**Institute of  
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**Sincere thanks to the 2020 Symposium Organising Committee:**

Tony Burnett, Dairy Farmers Milk Co-Op

Cameron Clark, University of Sydney

Sergio (Yani) Garcia, University of Sydney (DRF Director)

Lynne Gardner, University of Sydney

Helen Golder, Cows R Us / Scibus

Sabrina Lomax, University of Sydney

Nicolas Lyons, NSW DPI

Emily Neilson, Young Dairy Network

Michael Perich, Leppington Pastoral Company (DRF President)

Colin Thompson, Dairy farmer, Cowra NSW

Paul van Wel, Dairy NSW

Todd Whyman, Dairy farmer, Bega NSW

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